



<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/811,085	
	Filing Date	March 25, 2004	
	First Named Inventor	Feng Liang	
	Art Unit		
	Examiner Name		
Total Number of Pages in This Submission	9+	Attorney Docket Number	FGT 3G4 (81099482)

ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Technology Center (TC)
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	Recordation Cover Sheet, Assignment
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	PTO-1449 Form
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	Copy of Japanese Reference
<input type="checkbox"/> Response to Missing Parts/Incomplete Application	Remarks	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	John D. Russell, Registration No. 47,048 Kelsch Hartwell, P.C.
Signature	
Date	April 13, 2004

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Typed or printed name	Lauren Barberena		
Signature		Date	April 13, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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# FEE TRANSMITTAL

APR 16 2004

for FY 2004

Effective 10/31/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 40.00)

## Complete if Known

Application Number 10/811,085  
Filing Date March 25, 2004  
First Named Inventor Feng Liang  
Examiner Name  
Art Unit  
Attorney Docket No. FGT 3G4 (81099482)

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number  
Deposit Account Name

06-1510

Ford Global Technologies, LLC

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments

☐ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

### 1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 770	2001 385	Utility filing fee	
1002 340	2002 170	Design filing fee	
1003 530	2003 265	Plant filing fee	
1004 770	2004 385	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1)			(\$ 0.00)

### 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims	Fee from below	Fee Paid
Total Claims	-20** =	18.00	0.00
Independent Claims	-3** =	86.00	0.00
Multiple Dependent		0.00	0.00

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 86	2201 43	Independent claims in excess of 3
1203 290	2203 145	Multiple dependent claim, if not paid
1204 86	2204 43	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ 0.00)

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 420	2252 210	Extension for reply within second month	
1253 950	2253 475	Extension for reply within third month	
1254 1,480	2254 740	Extension for reply within fourth month	
1255 2,010	2255 1,005	Extension for reply within fifth month	
1401 330	2401 165	Notice of Appeal	
1402 330	2402 165	Filing a brief in support of an appeal	
1403 290	2403 145	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,330	2501 665	Utility issue fee (or reissue)	
1502 480	2502 240	Design issue fee	
1503 640	2503 320	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	40.00
1809 770	2809 385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 770	2810 385	For each additional invention to be examined (37 CFR 1.129(b))	
1801 770	2801 385	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 40.00)

## SUBMITTED BY

Name (Print/Type) John D. Russell Registration No. 47,048 Telephone (503) 224-6655  
Signature Date April 13, 2004

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Date: April 13, 2004

FENG LIANG and  
MICHAEL DEGNER

Serial No. : 10/811,085  
Filed : March 25, 2004  
For : PERMANENT MAGNET ELECTROMAGNETIC ACTUATOR  
FOR AN ELECTRONIC VALVE ACTUATION SYSTEM OF  
AN ENGINE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

S i r :

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 C.F.R. §§ 1.56, 1.97, and 1.98**

Applicants are submitting this Information Disclosure Statement pursuant to 37 C.F.R. §§ 1.56, 1.97, and 1.98 to disclose to the U.S. Patent and Trademark Office the patents, publications, applications, and/or other references listed on the enclosed, completed PTO-1449 form(s). The filing of this Information Disclosure Statement should not be construed as a representation that a search has been made or as an admission that the listed references are prior art for this application. Applicants respectfully request that the listed references be expressly considered during prosecution of the application, and that the references be made of record therein and appear among the "references cited" on any patents issuing therefrom.

This Information Disclosure Statement includes (1) 1 page of PTO-1449 form, and (2) a legible copy of each foreign and non-patent reference, if any, listed on the form. However, because this application was filed on or after July 1, 2003, no

copies of U.S. patents or published U.S. patent applications are included.

#### **FOREIGN-LANGUAGE REFERENCES**

A concise explanation of the relevance of each listed reference not in the English language follows:

Japanese Patent No. 2002130510A: This patent purports to disclose to provide an electromagnetic drive valve which reduces the consuming power while suppressing an increase of outer dimensions reasonably.

The electromagnetic drive valve is provided with electromagnets 21 and 22 which have an electromagnetic coil 31 and a core 32, in order to drive a valve body 23 to open or close by applying an electromagnetic force to an armature 26 with the electromagnets 21 and 22. In the core 32 of the electromagnets 21 and 22, a permanent magnet 38 whose dimension is larger than the inside diameter of the electromagnetic coil 31 and smaller than the outside diameter of the electromagnetic coil 31, and which is magnetized so that the surface of the electromagnetic coil 31 side and the opposite side surface provide different magnetic poles, is located with the both end sections facing the electromagnetic coil 31. In the core 32, a gap 39 which continues from the both end sections of the permanent magnet 38 to the outside diameter of the electromagnetic coil 31.

Paragraphs 43 and 45 describe bay shaped permanent magnet 51 and bent magnet 56, each touted as having the advantage that the shape allows for increased surface area on the magnet, thereby increasing the magnetic assist provided by the permanent magnet to the field created by coil 31. This increases the overall efficiency of the system. Paragraph 37 describes permanent magnet 38 as having the same advantage of increased surface area and magnetic assist, since it also extends past the

internal diameter of coil 31, without a need for the height of core 32 to be increased (to allow for downward extension of the magnet).

Paragraph 40 describes connection portion 48, which allows core 46 to be formed of an integral construction. The other embodiments appear to show inner and outer cores 32, 33 constructed as separate structures. Paragraphs 30 and 31 describe cavity 39 as formed immediately below coil 31, such that all magnetic field lines from coil 31 pass through permanent magnet 38, and none pass through cavity 39, which has a low magnetic permeability. Cavity 39 is constructed to extend horizontally from each end of magnet 38 to the outer diameter of coil 31, also preventing magnetic field created by the coil from passing through cavity 39. Through this shape and position of cavity 39, the pulling power of permanent magnet 38 and coil 31 is increased.

#### **TIMING OF DISCLOSURE / FEE INFORMATION**

This Information Disclosure Statement is being filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d), or (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application. Therefore, in accordance with 37 C.F.R. § 1.97(b), no fee or statement under 37 C.F.R. § 1.97(e) is required.

Please contact the undersigned with any questions or comments regarding this Information Disclosure Statement.

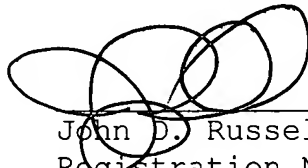
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Lauren Barberena

Respectfully submitted,

KOLISCH HARTWELL, P.C.



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SHEET 1 OF 1

FORM PTO-1449

INFORMATION DISCLOSURE  
CITATION IN AN APPLICATIONDOCKET NUMBER  
FGT 3G4APPLICATION NUMBER  
10/811,085APPLICANT(S)  
Feng Liang and Michael DegnerFILING DATE  
March 25, 2004

GROUP ART UNIT

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FIL. DATE IF APPROP.
	4,779,582	10-25-88	Lequense			
	4,829,947	5-16-89	Lequense			

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION	
						YES	NO
	2002/130510	5-9-02	JP			Abstract only	

## OTHER DOCUMENTS

	YOHJI OKADA et al, "Electromagnetic Valve Actuator for Automobile Engines", SAE Technical Paper No. 2004-01-1387, March 8-11, 2004

EXAMINER

DATE CONSIDERED